

ABSTRACT OF THE DISCLOSURE

[0050] A rotor that consists of a central hub or shaft and a plurality of boot shaped integral blade/vane units that combine a pronounced elongated vane tip extending substantially toward the incoming flow and also the direction of rotation forming a helix or pitch angle to the rotation axis centreline, preferably normal to and joined to the outer frontward extremity of a slightly rearward tilted blade/wing section that is connected by its inner end to the central hub of shaft. The rotor revolves about the rotation axis by incoming gas/fluid flow as most of the fluid flow is encouraged to move substantially outward and rearward as it travels into and past the forwardly projecting vane tips located a substantial distance radially from the axis of rotation. This maximises the torque developed and transferred to the hub/shaft in a manner that does not greatly inhibit total through flow, because the combined gas/fluid flow exit area (or gaps between blades/vanes) is much greater than the maximum rotor diameter and subsequently the rotor inlet area, which has the effect of increasing the through flow velocity and thus overall performance. The blades may have slots within them.